

REMARKS

Claim 2 has been canceled. Claim 16 has been previously canceled. Claims 1, 3 through 9, 12, and 20 have been amended. Claims 1, 3 through 15, and 17 through 20 remain in the application.

Claims 1 through 15 and 17 through 20 were rejected under 35 U.S.C. § 103 as being unpatentable over Smith (U.S. Patent No. 6,059,210) in view of either Rehmer (U.S. Patent No. 5,381,971), Forsyth (U.S. Patent No. 5,938,129) or Reynolds (U.S. Patent No. 1,902,721). Applicant respectfully traverses this rejection.

U.S. Patent No. 6,059,210 to Smith discloses a rotor assembly for a waste processing machine. A rotor assembly 30 includes a combination of processing tools 50a, 50b, 50c mounted to mounting arms 46. Each of the processing tools 50a, 50b, 50c includes a tool holder 52 having a general “C” shape. The tool holder 52 has a body 54 extending circumferentially and a first or trailing arm 56 extending radially at an angle therefrom with a first aperture 58 extending therethrough. The tool holder 52 also includes a second or leading arm 60 extending radially at an angle from the body 54 with a recess 62 at one end thereof. The tool holder 52 includes an aperture 64 and 66 at a lower radial end of the first arm 56 and second arm 60, respectively, and extending axially therethrough. The rotor assembly 30 includes at least one, preferably a pair of fasteners such as bolts 68 and nuts 70 for retaining the processing tool 50a, 50b, 50c to the mounting arms 46. The processing tool 50a also includes a cutting tool 74 attached to the tool holder 52. The cutting tool 74 has a carbide member 75 attached to a shaft 76 by suitable means such as brazing. The carbide member 75 is generally triangular in shape and is used to cut the waste material. The processing tool 50a also has a wear bar 80 disposed in the recess 62 of the second arm 60. The processing tool 50c includes a fan tool 90 attached to the tool holder 52. The fan tool 90 has a head 92 with a trapazodial or fan shape to push the reduced

waste material to exit the rotor assembly 30. Smith does not disclose a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine.

U.S. Patent No. 5,381,971 to Rehmer discloses a grinding apparatus. An assembly of discs 22 on a shaft 21 is obtained by a shaft sleeve 31 that is keyed to the shaft 21 by a longitudinal key 32. While respective hammers 23 are pivotally connected on a pivot rod 23A between adjacent pairs of discs 22, a fan device comprises flat fan blades 33 welded to adjacent discs 22 so as to occupy a position at about 45 degree to the adjacent hammers 23. The normal direction of rotation of the shaft 21 is clockwise, or in the direction to throw the incoming material against breaker walls 16 and 25. Thus, the fan blades 33 will move in the same direction so that air, gases and vapors which are in a chamber 14 with incoming material will be drawn into the rotor and be forced to pass through a front structure 26 of a base 20. Rehmer does not disclose a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine.

U.S. Patent No. 5,938,129 to Forsyth discloses rotary mills. A cutting assembly 10 includes a rotating arm 12, cutting blades 14, cooling fins 16, and bolts 18 with nuts 20. As can be seen from FIG. 1, the cooling fins 16 and cutting blades 14 are assembled so that the cooling fins 16 provide a spacing between the cutting blades 14. Forsyth does not disclose a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent

the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine.

U.S. Patent No. 1,902,721 to Reynolds discloses a rock crusher and separator. Pivottally mounted on pins 32 extending through aligned openings formed in the disks are hammers 34 which serve to crush rock or other material fed into the housing upon a breaker plate 36. The apparatus is arranged to classify or separate material as it is crushed. This is accomplished by providing the disks 28 and hammers 34 with fan blades or vanes 60 and 61, respectively, which induce a current of air through the housing, the current of air picks up and carries with it the finely divided particles as the material is crushed. Reynolds does not disclose a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine.

In contradistinction, claim 1, as amended, clarifies the invention claimed as a multi-functional tool assembly for a waste processing machine including a tool holder for attachment to a rotor assembly of the waste processing machine. The multi-functional tool assembly also includes a single multi-functional tool supported by the tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from the rotor assembly of the waste processing machine.

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837

F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that “[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art.” In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also In re Lalu, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) (“In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.”)

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 1. Specifically, Smith ‘210 merely discloses a rotor assembly for a waste processing machine having a combination of processing tools mounted to mounting arms. Smith ‘210 lacks a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer and spaced radially outwardly from the tool holder to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Smith ‘210, only one of the processing tools 50a, 50b, 50c is mounted to mounting arms 46.

Rehmer ‘971 merely discloses a grinding apparatus having a fan device of flat fan blades welded to adjacent discs so as to occupy a position at about 45 degrees to adjacent hammers. Rehmer ‘971 lacks a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to

the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Rehmer '971, flat fan blades 33 are welded to adjacent discs 22 so as to occupy a position at about 45 degree to the adjacent hammers 23 and not attached to a head and disposed adjacent a waste reducer attached to the head to aggressively output reduced waste material from a rotor assembly.

Forsyth '129 merely discloses rotary mills having a cutting assembly including a rotating arm, cutting blades, cooling fins, and bolts with nuts. Forsyth '129 lacks a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Forsyth '129, the cooling fins 16 and cutting blades 14 are assembled so that the cooling fins 16 provide a spacing between the cutting blades 14 and not attached to a head and disposed adjacent a waste reducer attached to the head to aggressively output reduced waste material from a rotor assembly.

Reynolds '721 merely discloses a rock crusher and separator providing disks and hammers with fan blades, which induce a current of air through a housing to pick up and carry with it finely divided particles as the material is crushed. Reynolds '721 lacks a single multi-functional tool supported by a tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Reynolds '721, the disks 28 and hammers 34 are provided with fan blades 60 and 61 and are not attached to a head and disposed adjacent a waste reducer attached to the head to aggressively output reduced waste material from a rotor assembly. There is no

suggestion or motivation in the art to combine Smith '210 and either Rehmer '971, Forsyth '129, or Reynolds '721 together.

The references, if combinable, fail to teach or suggest the combination of a multi-functional tool assembly for a waste processing machine including a tool holder for attachment to a rotor assembly of the waste processing machine and a single multi-functional tool supported by the tool holder to reduce waste material and including a head, a waste reducer attached to the head, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from the rotor assembly of the waste processing machine as claimed by Applicants. Contrary to the Examiner' opinion, this claimed combination is not a design choice. The claimed combination is novel and unobvious because the multi-functional tool assembly has a single multi-functional tool that allows waste material to be reduced and aggressively outputs the reduced waste material from the rotor assembly in the waste processing machine. The Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 12, claim 12, as amended clarifies the invention claimed as a processing tool for a waste processing machine including a tool holder for attachment to a rotor assembly of the waste processing machine. The processing tool also includes a multi-functional tool supported by the tool holder. The multi-functional tool includes a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from the rotor assembly of the waste processing machine.

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 12. Specifically, Smith '210 merely discloses a rotor

assembly for a waste processing machine having a combination of processing tools mounted to mounting arms. Smith '210 lacks a multi-functional tool supported by a tool holder and including a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Smith '210, only one of the processing tools 50a, 50b, 50c is mounted to mounting arms 46.

Rehmer '971 merely discloses a grinding apparatus having a fan device of flat fan blades welded to adjacent discs so as to occupy a position at about 45 degrees to adjacent hammers. Rehmer '971 lacks a multi-functional tool supported by a tool holder and including a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Rehmer '971, flat fan blades 33 are welded to adjacent discs 22 so as to occupy a position at about 45 degree to the adjacent hammers 23 and not a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output reduced waste material from a rotor assembly.

Forsyth '129 merely discloses rotary mills having a cutting assembly including a rotating arm, cutting blades, cooling fins, and bolts with nuts. Forsyth '129 lacks a multi-functional tool supported by a tool holder and including a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Forsyth '129, the cooling fins 16 and cutting blades 14 are assembled so that the cooling fins 16 provide a spacing between the cutting blades

14 and not a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent a waste reducer to aggressively output reduced waste material from a rotor assembly.

Reynolds '721 merely discloses a rock crusher and separator providing disks and hammers with fan blades, which induce a current of air through a housing to pick up and carry with it finely divided particles as the material is crushed. Reynolds '721 lacks a multi-functional tool supported by a tool holder and including a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine. In Reynolds '721, the disks 28 and hammers 34 are provided with fan blades 60 and 61 and not a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent a waste reducer to aggressively output reduced waste material from a rotor assembly. There is no suggestion or motivation in the art to combine Smith '210 and either Rehmer '971, Forsyth '129, or Reynolds '721 together.

The references, if combinable, fail to teach or suggest the combination of a processing tool for a waste processing machine including a tool holder for attachment to a rotor assembly of the waste processing machine and a multi-functional tool supported by a tool holder and including a head, a shaft attached to the head, a waste reducer attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the waste reducer to aggressively output the reduced waste material from a rotor assembly of a waste processing machine as claimed by Applicants.

Further, the CAFC has held that “[t]he mere fact that prior art could be so modified would not have made the modification obvious unless the prior art suggested the

desirability of the modification". In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). The Examiner has failed to show how the prior art suggested the desirability of modification to achieve Applicant's invention. Thus, the Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 12 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 20, claim 20, as amended clarifies the invention claimed as a waste processing machine including a rotor assembly and a tool holder attached to the rotor assembly. The tool holder includes a first arm extending radially and a second arm extending radially and spaced from the first arm. The waste processing machine also includes a single multi-functional tool having a shaft attached to either one of the first arm and the second arm of the tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter. The fan has a width greater than a width of the cutter and is located radially inward of the cutter to aggressively output the reduced waste material from the rotor assembly.

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 20. Specifically, Smith '210 merely discloses a rotor assembly for a waste processing machine having a combination of processing tools mounted to mounting arms. Smith '210 lacks a single multi-functional tool attached to either one of a first arm and second arm of a tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly. In Smith '210, only one of the processing tools 50a, 50b, 50c is mounted to mounting arms 46.

Rehmer '971 merely discloses a grinding apparatus having a fan device of flat fan blades welded to adjacent discs so as to occupy a position at about 45 degrees to adjacent hammers. Rehmer '971 lacks a single multi-functional tool having a shaft attached to either one of a first arm and second arm of a tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly. In Rehmer '971, flat fan blades 33 are welded to adjacent discs 22 so as to occupy a position at about 45 degree to the adjacent hammers 23 and not a fan attached to a head and disposed adjacent a cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly.

Forsyth '129 merely discloses rotary mills having a cutting assembly including a rotating arm, cutting blades, cooling fins, and bolts with nuts. Forsyth '129 lacks a single multi-functional tool having a shaft attached to either one of a first arm and second arm of a tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly. In Forsyth '129, the cooling fins 16 and cutting blades 14 are assembled so that the cooling fins 16 provide a spacing between the cutting blades 14 and not a fan attached to a head and disposed adjacent a cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly.

Reynolds '721 merely discloses a rock crusher and separator providing disks and hammers with fan blades, which induce a current of air through a housing to pick up and carry

with it finely divided particles as the material is crushed. Reynolds '721 lacks a single multi-functional tool having a shaft attached to either one of a first arm and second arm of a tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly. In Reynolds '721, the disks 28 and hammers 34 are provided with fan blades 60 and 61 and not a fan attached to a head and disposed adjacent a cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from a rotor assembly. There is no suggestion or motivation in the art to combine Smith '210 and either Rehmer '971, Forsyth '129, or Reynolds '721 together.

The references, if combinable, fail to teach or suggest the combination of a waste processing machine including a rotor assembly, a tool holder attached to the rotor assembly having a first arm extending radially and a second arm extending radially and spaced from the first arm, and a single multi-functional tool having a shaft attached to either one of the first arm and the second arm of the tool holder, a head attached to the shaft, a cutter attached to the head to reduce waste material, and a fan attached to the head and disposed adjacent the cutter with the fan having a width greater than a width of the cutter and being located radially inward of the cutter to aggressively output the reduced waste material from the rotor assembly as claimed by Applicants. Contrary to the Examiner' opinion, this claimed combination is not a design choice. The claimed combination is novel and unobvious because the multi-functional tool assembly has a single multi-functional tool that allows waste material to be reduced and aggressively outputs the reduced waste material from the rotor assembly in the waste processing machine. The Examiner

has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 20 is allowable over the rejection under 35 U.S.C. § 103.

Obviousness under § 103 is a legal conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1073, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988), and the subjective opinion of the Examiner as to what is or is not obvious, without evidence in support thereof, does not suffice. Since the Examiner has not provided a sufficient factual basis, which is supportive of his/her position (see In re Warner, 379 F.2d 1011, 1017, 154 U.S.P.Q. 173, 178 (C.C.P.A. 1967), cert. denied, 389 U.S. 1057 (1968)), the rejection of claims 1 through 15 and 17 through 20 is improper. Therefore, it is respectfully submitted that claims 1, 3 through 15, and 17 through 20 are allowable over the rejection under 35 U.S.C. § 103.

Based on the above, it is respectfully submitted that the claims are in a condition for allowance or in better form for appeal. Applicants respectfully request reconsideration of the claims and withdrawal of the final rejection. It is respectfully requested that this Amendment be entered under 37 C.F.R. 1.116.

Respectfully submitted,

By: 
Daniel H. Bliss
Reg. No. 32,398

BLISS McGLYNN, P.C.
2075 West Big Beaver Road, Suite 600
Troy, Michigan 48084
(248) 649-6090

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